



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/593,624

04/19/2007

Shunji Suzuki

062926

1930

38834 7590 12/28/2009
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

HARRIS, GARY D

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

12/28/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/593,624	Applicant(s) SUZUKI ET AL.	
	Examiner GARY D. HARRIS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08/06/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 & 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Sagawa et al. US 5,194,098, and further in view of Nomura et al. US 2004/0094237.

As to Claim 1, US Sagawa et al. US 5,194,098 discloses (in the 5th embodiment) a rare earth film Fe-B-R, where R is 8-30 percent, and consists of Yttrium (a rare earth lanthanide element), Fe and B. Crystals are present (Col. 3, Line 19-26). The film alloys are amorphous in nature (composite texture) and discloses that the process of making includes a sintering process to produce any desired shape and size (Col. 5, Line 39-46). Sagawa discloses that the crystal grain sizes range from 2 to 40 microns and increase the Hc of various materials based on their critical size and would overlap applicants range (Col. 6, Line 41-46).

Sagawa does not teach a thickness range.

However, Sagawa teaches that thin film permanent magnets are isotropic by nature (Col. 2, Line 22-23) and can be formed into any desired shape or size (Col. 5,

Art Unit: 1794

Line 39-46). The thickness is ultimately controlled by the crystal structure and grain size determined by post processing such as pulverizing, sintering and heat treatment (Col. 13, Line 48-50). These treatments result in a crystal grain size and ultimately a desired coercive force (Col. 13, Line 33-40 & table 3).

It would have been obvious to one of ordinary skill in the art to modify the thickness of the layer depending on the crystal structure and grain size. One would have been motivated to control the thickness to obtain a desired shape or size. One would have changed the thickness of the final alloy to further obtain a desired magnetic coercivity.

Sagawa et al. US 5,194,098 does not disclose $R_2Fe_{14}B$ crystals. However, Nomura et al. US 2004/0094237 discloses that R-Fe-B magnets are structured with a hard magnetic phase of $R_2Fe_{14}B$ is present as the primary phase and grain boundary moieties surround the primary phase grains (Paragraph 5). The $R_2Fe_{14}B$ phase would inherently be present in the Sagawa invention because this phase is inevitably introduced in an R-Fe-B magnet during the manufacturing process.

The R-Fe-B magnetic material it is an obvious variant to the claimed article.

The product as claimed requires the rare earth lanthanide deposited by a physical forming method into an alloy film. The process limitations have been considered with regard to the claimed structure, but are not given patentable weight with regard to the process. See MPEP 2113.

As to Claim 2, Sagawa et al. US 5,194,098 discloses the Fe-B-R magnet with an amorphous structure or a tetragonal crystal structure (Col. 13, Line 53-67). This

Art Unit: 1794

tetragonal structure would inherently have a c-axis orientation which has an easy axis of magnetization nearly perpendicular. As a tetragonal crystal structure has three axes, two of which are equal and at right angles to one another. The third axis is perpendicular to these.

Response to Arguments

Examiner acknowledges withdrawn claim 4.

Applicant's arguments filed 08/06/2009 have been fully considered but they are not persuasive.

Applicant is arguing the method of depositing the R-Fe-B film is by a physical forming method. However, applicant is not claiming a method of deposition. The method of deposition is different, however, since applicant is claiming a rare earth magnet, the rare earth magnet of Sagawa et al. US 5,194,098, and further in view of Nomura et al. US 2004/0094237 would necessarily be similar to applicants claim.

The product is taught to have the same R-Fe-B components.

The process limitations have been considered with regard to the claimed structure, but are not given patentable weight with regard to the process. See MPEP 2113.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Ruthkosky/
Supervisory Patent Examiner, Art Unit 1794

/G. D. H./Gary D. Harris
Examiner, Art Unit 1794